



Australian Government
**Rural Industries Research and
Development Corporation**

Native Foods

R&D Priorities and Strategies

2007 – 2012



RIRDC Shaping the future

© 2008 Rural Industries Research and Development Corporation.
All rights reserved.

ISBN 1 74151 611 0
ISSN 1440-6845

Native Foods: R&D Priorities and Strategies 2008-2013
Publication No. 08/022

The information contained in this publication is intended for general use to assist public knowledge and discussion and to help improve the development of sustainable industries. The information should not be relied upon for the purpose of a particular matter. Specialist and/or appropriate legal advice should be obtained before any action or decision is taken on the basis of any material in this document. The Commonwealth of Australia, Rural Industries Research and Development Corporation, the authors or contributors do not assume liability of any kind whatsoever resulting from any person's use or reliance upon the content of this document.

This publication is copyright. However, RIRDC encourages wide dissemination of its research, providing the Corporation is clearly acknowledged. For any other enquiries concerning reproduction, contact the Publications Manager on phone 02 6271 4165.

RIRDC Contact Details

Rural Industries Research and Development Corporation
Level 2
15 National Circuit
BARTON ACT 2600
PO Box 4776
KINGSTON ACT 2604

Phone: 02 6271 4100
Fax: 02 6271 4199
Email: rirdc@rirdc.gov.au.
Web: <http://www.rirdc.gov.au>



Australian Government

**Rural Industries Research and
Development Corporation**

Native Foods R&D Priorities and Strategies 2007 to 2012

February 2008

RIRDC Publication No 08/02

Foreword

The Native Foods sub-program has developed as a cohesive set of projects within the New Plants Program. With the formation of Australian Native Food Industry Limited as a peak body for the industry it is timely to review the R&D plan that RIRDC has followed over the past five years. RIRDC has provided \$1.65 million to 33 projects since it began in 1998, with contributions from research organisations and the industry bringing the total investment to \$3.97 million. A wide range of topics have been supported, including support for the development of the industry peak body, with the majority of funding going to addressing production constraints and exploring novel uses to grow the markets for Australian native foods.

RIRDC is committed to the development of Five Year Plans for each of its Research and Development Programs in keeping with the Corporation's Five Year Strategic Business Plan, and the National and Rural Research Priorities. This report outlines the R&D priorities and strategies for the Native Foods Industry and will inform the New Plant Products Five Year Plan.

The native food industry is very diverse and includes wild harvest as well as cultivation. Wild harvest covers the breadth of the country from wild harvest of Kakadu plums in the north to bush tomatoes and wattle seed in the arid interior and mountain pepper in Tasmania. Cultivation of Australian native flora is growing rapidly, again with considerable geographic diversity, from rainforest fruits in the north east of Australia to muntries, a berry, in Victoria. The industry includes indigenous people who are involved in bush harvest and cultivation, and the rights over traditional uses are respected. The industry is united in bringing the uniquely Australian flavour experience to all consumers and in doing so create many profitable enterprises in regional areas of Australia.

This R&D Priorities and Strategies Report builds on the outcomes of a stakeholder meeting conducted in June 2007 that followed an industry planning day and involved a wide range of industry stakeholders from growers to processors, marketers and distributors. This report was circulated to all participants from the planning day for comment and input was then sought from the wider industry prior to being finalised. The report identifies key objectives for investment and areas for future consideration, detailing the agreed strategic research and development needs that RIRDC will pursue in partnership with industry. As a sub-program it focuses on priorities and on strategies that will strengthen industry engagement with R&D and best meet the diverse needs of the industry members.

The production of this report was funded by RIRDC core funds which are provided by the Australian Government.

This R&D Priorities and Strategies Report, an addition to RIRDC's diverse range of over 1700 publications, forms part of the New Plant Products Research and Development Program, which aims to facilitate the development of new industries based on plants or plant products that have commercial potential for Australia.

Peter O'Brien
Managing Director

Snapshot of Research Priorities and Strategic Directions

Vision

- Consumers in Australia and around the world enjoying, sharing and valuing the authentic Australian flavour experience; enabling a profitable and sustainable Australian industry for this growing market.

Mission

To provide research and development that will underpin the industry's ability to create and sustain an authentic Australian flavour experience for consumers by:

- Building consumer recognition and appreciation of the unique flavour experience;
- Achieving a global reputation for reliable supply of consistently high quality and safe food and flavour additives;
- Solving production problems that threaten reliability; and
- Recognising the contributions of Indigenous culture, food practices and value of involvement in the industry.

Objectives

An indicative allocation of resources is given in brackets.

- Developing and supplying product information to support market access and market growth (50%)
- Improving production (growing) efficiency (35%)
- Investigating new species for their potential to add to the appeal and profitability of industry (10%)
- Building research and industry capacity and improved communications of R&D opportunities and impacts (5%).

Contents

FOREWORD.....	III
SNAPSHOT OF RESEARCH PRIORITIES AND STRATEGIC DIRECTIONS.....	IV
VISION	IV
MISSION.....	IV
OBJECTIVES	IV
1. INTRODUCTION.....	1
PREPARATION OF THE R&D PRIORITIES AND STRATEGIES REPORT	1
OVERVIEW OF THE R&D PRIORITIES AND STRATEGIES REPORT	1
VISION	2
MISSION.....	2
ALIGNMENT WITH GOVERNMENT AND RIRDC PRIORITIES.....	3
2. OVERVIEW OF THE NATIVE FOOD INDUSTRY	5
RESEARCH AND DEVELOPMENT	7
3. ANALYSIS OF STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS	9
4. FIVE YEAR R&D SUB-PROGRAM.....	12
VISION	12
MISSION.....	12
5. NATIVE FOODS R&D BUDGET.....	17

1. Introduction

This is the third Five Year Research and Development (R&D) Priorities and Strategies report for Australia's native food industry. The first Five Year R&D Plan was developed in 1995–96 following the Program's establishment in 1995. The second R&D plan, developed in 2001, covered 2002–2006¹. This report builds on the previous plans with a focus on the areas of R&D that are of greatest potential value to Australia's native foods industry and where there are capabilities to provide high quality R&D.

Preparation of the R&D Priorities and Strategies Report

The R&D Priorities and Strategies Report was developed in a workshop with industry representatives in the Gold Coast on June 8, 2007. The workshop was facilitated by Dr Jenny Gordon of the Centre for International Economics (CIE) and followed a strategic planning day conducted by Australian Native Food Industry Limited (ANFIL). The workshop discussed the:

- achievements of the R&D investment to date and lessons to improve the relevance, uptake and impact of R&D;
- main factors limiting the growth and success of the industry and the opportunities emerging for the industry;
- the role that R&D could play in addressing constraints and engaging with opportunities;
- priorities for R&D where there is common interest across industry members, and
- strategies for raising the quality and quantity of R&D to support industry development.

A survey of the outputs and outcomes of the Native Food sub-program was conducted by ANFIL Director, Sibylla Hess-Buschmann prior to the workshop. An initial draft of the plan was prepared by CIE. A draft of the Five Year R&D Priorities and Strategies Report will be distributed to the Native Food Industry's key stakeholders, workshop participants and interested parties before being finalised.

Overview of the R&D Priorities and Strategies Report

The vision and mission of the industry are still in development and the R&D plan has proved to be a catalyst to thought on where the industry sees itself in a decade. ANFIL recognise the important but limited role that R&D plays in developing the industry.

The vision and mission for this R&D Priorities and Strategies Report align with the industry's preliminary thinking.

¹ RIRDC 2002, *R&D Plan for the Equine Industry Program*, Publication No. 02/026, Canberra.

Vision

- Consumers in Australia and around the world enjoying, sharing and valuing the authentic Australian flavour experience; enabling a profitable and sustainable Australian industry for this growing market.

Mission

To provide research and development that will underpin the industry's ability to create and sustain an authentic Australian flavour experience for consumers by:

- Building consumer recognition and appreciation of the unique flavour experience;
- Achieving a global reputation for reliable supply of consistently high quality and safe food and flavour additives;
- Solving production problems that threaten reliability; and
- Recognising the contributions of Indigenous culture, food practices and value of involvement in the industry.

Objectives

An indicative allocation of resources is given in brackets.

- Developing and supplying product information to support market access and market growth (50%)
- Improving production (growing) efficiencies (35%)
- Investigating new species for their potential to add to the industry appeal and profitability (10%)
- Building industry relationships and improving communications of R&D opportunities and impacts (5%).

Alignment with Government and RIRDC priorities

The Native Foods R&D priorities and strategies align well with the Federal Government's National Research Priorities and Rural Research Priorities and with RIRDC's corporate objectives.²

Contribution to RIRDC outcome areas

RIRDC has an overarching goal of maximising the return across the triple bottom line of its investments. It has five main outcome areas as set out in the *Primary Industries and Energy Research and Development Act 1989* (the PIERD Act) and as directed in the government research priorities. The Native Food sub-program is in RIRDC's New Rural Industries portfolio, of which the objective is:

To facilitate a more profitable, dynamic and sustainable rural sector

National research priorities

The national research priorities are set out below.

- An environmentally sustainable Australia
- Promoting and maintaining good health
- Frontier technologies for building and transforming Australian industries
- Safeguarding Australia.

The Native Foods R&D sub-program makes contributions across all of these priorities, notably the first three. Safeguarding Australia is less of a priority for the Native Foods industry and is discussed below. Australian native foods address well the priority for an environmentally sustainable Australia. They also offer opportunities for new foods that are high in anti-oxidants and other valuable properties for promoting good health. Perhaps, most importantly for health, the industry is focused on raising the profile of Australian flavours and the healthy eating experience.

Rural research priorities

The four objectives of the sub-program, and associated research, will meet on an individual basis either one or more of the rural research priorities set out below.

Productivity and Adding Value

Improve the productivity and profitability of existing industries and support the development of viable new industries.

The sub-program addresses production constraints to improve productivity of existing growers and to help new growers enter the market.

Supply Chain and Markets

Better understand and respond to domestic and international market and consumer requirements and improve the flow of such information through the whole supply chain, including to consumers.

² See RIRDC, Corporate Plan 2003-2008 on the web www.rirdc.gov.au

Registration of native foods and flavourings is a critical step in gaining market acceptance and can pose a major barrier to market access. The process required depends on the nature of the product and the target market. Particularly important for native food flavourings is obtaining Generally Recognised as Safe (GRAS) status through the Flavor and Extract Manufacturers Association (FEMA).

Natural Resource Management

Support effective management of Australia's natural resources to ensure primary industries are both economically and environmentally sustainable.

The native food industry provides excellent opportunities to encourage the protection and expansion of native flora. Commercial uses of native flora provide incentives to collect, identify and preserve the genetic diversity of Australian native plants. The growth of cultivation of native plants reduces pressure from wild harvest, although it must be noted that wild harvest is, for some plants, consistent with their conservation.

Climate Variability and Climate Change

Build resilience to climate variability and adapt to and mitigate the effects of climate change.

The sub-program does not directly address issues of climate change, but the sheer diversity of the species (and within species the genetic variety) being utilized for Australian native ingredients and the geographic diversity offer alternatives for agricultural landuse that might be required with climate change.

Biosecurity

Protect Australia's community, primary industries and environment from biosecurity threats.

With the focus on Australian native species the risk to the industry from introduced pathogens is lower than for industries based on exotics that may have been protected from their natural enemies by Australia's geographic isolation. Thus the R&D sub-program does not have a biosecurity focus. That said, it aims to build up diagnostic and other analytical capacities that would stand the industry in good stead should any threats emerge.

Supporting the Rural Research and Development Priorities

Improve the skills to undertake research and apply its findings and promote the development of new and existing technologies.

The R&D sub-program takes research skill development very seriously as the inconsistencies in laboratory testing of active constituents has been a challenge to the industry in undertaking its own R&D. The strategies directly address the need to involve producers in the R&D to ensure adoption and to undertake R&D in the most efficient way possible.

2. Overview of the Native Food Industry

While “bushfood” has been the staple of Australia’s Aboriginal people for millennia, the impetus for the establishment of “*a bushfood industry*” has been attributed to pioneers such as Vic Cherikoff and to the restaurateurs Jean-Paul Bruneteau and Jennifer Dowling who introduced native foods into their menus during the early and mid-1980s. In addition to being uniquely Australian, such food was perceived to be clean, healthy, organic and environmentally friendly. The term native food was adopted in the late 1990s to reflect the new cuisine and uses being made of Australian plants that built on and complemented traditional uses. This new direction for the industry arose from RIRDC Project BUS-1A (00/61) *Marketing the Australian Native Food Industry*.

Products and production

The industry is made up of a great diversity of species, geographical areas, and uses. It includes wild harvest, specialist growers and importantly a number of vertically integrated firms as well as firms that process and market Australian native food products as part or the main share of their product portfolio. Except for a small amount of fresh produce going to restaurants, the bulk of the domestic produce is dried, frozen or further processed, often in combination with non-native food ingredients, into a wide range of value-added foodstuffs. Gift and specialty shops are important outlets in this sector of the market. The food service sector is becoming increasingly involved but uptake by processors servicing the larger retail and wholesale food service market is currently limited.

Table 2.1 provides a list of key commercial native foods produced. These species will be the primary focus for the Australian Native Foods industry for the next five years. There is no formal data available on the volume of production or sales, with some product still sold directly to final users (such as restaurants) or in farmer markets. Collection and dissemination of robust statistical information will be an important challenge for the Australian Native Foods Industry.

Table 2.1 Native foods – most common

Lemon myrtle leaf
Lemon myrtle oil
Anise myrtle leaf
Wattleseed
Bush tomato
Davidson plum
Riberry
Kakadu plum
Muntries
Lemon aspen
Desert limes
Quandong
Mountain pepper *Tasmannia lanceolata* leaf
Mountain pepper *Tasmannia lanceolata* berry
Source: ANFIL meeting and industry survey June 2007

Emerging native foods include *Syzygium* (other than riberry and anise myrtle), warrigal greens, Tanami apples, bush banana (*Marsdenia*), finger limes, saltbush, river mint, *Eucalyptus olida* and cut leaf mints. Other species identified but yet to be developed include native currants (*Achrotichie depressa*), passion berry, samphire, sea parsley, boabs, native basil, native thyme, nitre bush, native tamarind (*Diploglottis campbellii*), bunya nut, anise myrtle oil, kulyu, meen, and youlk.

Structure and value of the industry

There are approximately 500 active participants in the industry (this excludes a very significant number of Aboriginal participants through the Land Councils and other groups). They operate in all states and territories. Bush harvesting is the dominant means of production with half a dozen species still wild collected but cultivation is expanding. Some participants favour the production of native food by mainstream agricultural and horticultural methods whereas others prefer alternative approaches that are perceived to be more environmentally friendly than conventional methods. The absence of registered chemicals/minor use permits for native species means that pesticide free practices are the norm. Native citrus do have chemical permits as they are classified with common *Citrus spp* and are therefore the only exception to this. Native foods generally comprise only a part of the overall business activity for many of those involved in the industry.

The gross value of the industry was estimated to be \$10-12 million (including value adding) in 1995–96. The gross value of the industry includes subsistence use, wild harvest, farm production, a wide range of value adding activities and a variety of endusers including restaurants, retailers and other hospitality providers. The farmgate and ex-nursery gross value of production is thought to be an additional \$5 million. Average returns across the industry are reputedly low. No current firm figures are available but the recent take-up of native food product by major supermarket chains, both locally and overseas, suggests increasing customer demand.

Industry organisations and representation

Several state governments have established Bushfood or Native Food organisations and developed strategic plans for the development of the industry in their state. A few species based organisations have also been established such as the Australian Quandong Industry Association

Australian Native Foods Limited (ANFIL) was incorporated on 15 December 2006 as the national peak industry body. It welcomes members from any part of the value chain. Its objects are:

- To act as a body representative of the Industry and in particular provide a channel for:
 - Communication and representation at political levels and authorities in relation to the regulatory control of the industry;
 - Liaison with indigenous communities and organisations in relation to the Industry
 - Any necessary public relations in support of the Industry
 - Undertaking research, market development and product development projects for the Industry, particularly on a national basis;
- To provide leadership and direction in relation to the maintenance, improvement and development of the standards of the Industry, related to Industry processes, produce and products;
- To act as a consulting and advisory body among its members;
- To foster a closer association between persons engaged in, connected with, serviced by or interested in the Industry;
- To establish Regions and work with Regional Councils to promote activities of value to members; and
- To engage in other activities in support of the above objectives.

Research and development

The Native Foods R&D Priorities and Strategies focus on plant-based native food, R&D on animal-based native food being currently supported from RIRDC's New Animal Products program. The first R&D plan for the Native Food industry was developed in 1998. It built on the collaborative efforts of industry participants and leaders at the time and on the activities of the Australian Native Bushfood Industry Committee (ANBIC). In March 2001 a group of 15 industry members, including growers, processors, marketers and communicators in this field came together to review the 1998 document. The priorities set during this review were:

- Understanding, strengthening and developing markets
- Improving existing products and developing new ones
- Enhancing the ability of the industry to meet appropriate safety and food standards
- Improving production efficiency while maintaining ecological integrity
- Enhancing the human resources of the industry.

The RIRDC sub-program has invested \$3.97 million since 1998 in 33 projects. RIRDC funded 42 per cent of this expenditure, with research organisations contributing 35 per cent and industry 23 per cent. At the time of writing there were six current projects one pending contracting and one proposal. The industry contribution to RIRDC has been through

participation and in some cases cash contributions to projects. The industry does not have a voluntary or compulsory levy in place.

Table 2.2 provides a summary of the R&D expenditure by investment area. A wide variety of projects have been undertaken. In recent years there has been a focus on food safety as well as supporting the development of an industry organisation. The program has continued to explore new native food products to see if they add to the range of food types and flavours available and have commercial prospects.

Table 2.2 R&D expenditure by major categories

	1998/99-2006/07		
	Number	Total \$	Share RIRDC %
Capacity for research		12,470	64
Food safety		347,808	48
Industry development		574,842	55
Marketing		112,814	52
Novel uses		998,327	32
Production systems/issues		1,927,667	40
Total	33	3,973,928	42

Source: RIRDC database

A survey conducted for the R&D planning workshop found that the industry was a good user of R&D, but the RIRDC program R&D had disappointing penetration and limited impact to date. Greater effort in engaging industry members in the R&D activities was seen to be an essential part of ensuring more applicable R&D outputs and promoting adoption.

3. Analysis of Strengths, Weaknesses, Opportunities and Threats

The analysis of strengths, weaknesses, opportunities and threats (SWOT) was undertaken at the Five Year Plan workshop held on the Gold Coast on 13 June 2007 and facilitated by Dr Jenny Gordon.³ The ANFIL meeting the previous day recorded issues facing each species which was a useful complement to the industry level SWOT analysis. Table 3.1 presents the species advantages and constraints, and the opportunities and threats.

Table 3.1 Native Foods Species: Advantages, Constraints, Opportunities and Threats

	Advantage/constraint	Opportunity/threat
Lemon myrtle leaf	No HS - internationally harmonised commodity code Not GRAS listed yet	Grown in 5 other countries
Lemon myrtle oil		Synthetic and substitute citral resources Potential to market differences from synthetics
Anise myrtle leaf	Favoured flavour profile	
Wattleseed		Cost effective African production (but poorer taste)
Bush tomato	Bush harvest –production constraints	Scope for selection to substantially improve yields and scope to manage for higher wild production
Davidson plum	Previously abandoned orchards coming back into production	Very high antioxidant content but bioavailability still to be assessed
Riberry	Great flavour and colour Soft fruit and short shelf life	Versatile product
Kakadu plum	Wild harvest for quality product	High in antioxidants Good name recognition
Muntries	No clear flavour advantage Sourced from single region	Glut in production Clonal selection for colour
Lemon aspen	Production constraints	Great flavours
Desert limes	Sensitive to harvest time and post harvest handling	Lasts fresh for up to 6 months
Quandong	Slow growing enormous variability	High recognition and saleability
Mountain pepper <i>Tasmannia lanceolata</i> leaf	Large untapped resource	Timber plantations eroding wild harvest areas
Mountain pepper <i>Tasmannia lanceolata</i> berry	Unique product and taste Unreliable supply	Fostering irrigated cultivation; Not all operators using best practice, some unlicensed
Warrigal greens	Post harvest handling issues- short shelf life	Well recognised (known as NZ spinach)

Source: ANFIL meeting and industry survey June 2007

³ See Chapter 1, Introduction, Preparation of the Plan.

Table 3.2 sets out the SWOT analysis for the industry.

Table 3.2 SWOT analysis

Strengths	Weaknesses
<ul style="list-style-type: none"> • No need for pesticides – clean and green advantage • Functional food aspects of many products and perception of products as healthy • Strong links to value adding • Industry members strongly engage with research as being important for the industry development • Establishment of an industry peak body • Breadth of products which can be produced from Australian native foods 	<ul style="list-style-type: none"> • Consumption by a sub-set of the population is not recognised as evidence for GRAS (Generally Recognised as Safe) listing • HACCP is inconsistent with organic certification • Association of native food cuisine with bush tucker and traditional indigenous diet rather than as new tastes for Australian cuisine – lack of awareness in the market of the products available, no shelf presence • The difficulty of getting consistent test results from laboratories • Lack of agreed standards for the products • Breadth of products which can be produced from Australian native foods • Current fragmentation of the industry • High cost of bringing new products to market
Opportunities	Threats
<ul style="list-style-type: none"> • Food manufacturers and chefs seek innovation and product differentiation • Current EU ruling on novel foods is being revised – may provide scope to include native foods as traditional not novel • DAFF action on listing native foods in the CODEX • Engaging with indigenous communities to better explore opportunities and functional food properties • There is a considerable amount of knowledge on how to grow native foods that is not being shared and could be • Seasonality of overseas producers 	<ul style="list-style-type: none"> • Need for testing to meet regulatory requirements and general emphasis that other foods in long term use have not been subjected to. Potential for greater market access requirements in the future • Concerns about the sustainability of wild harvest • Potential for States to enforce royalties on use of germplasm and wild harvest. • Access to native title lands for cultivation eg bush tomato. • Australian native plants are being produced in other countries eg. Wattleseed in Africa • Food safety concerns with processed and fresh product – a ‘scare’ episode impacts on all producers • Need to manage perceptions of resources used per kilogram of edible product, it is important not to create unrealistic expectations

Source: Industry workshop 13 June 2007.

Areas of importance not addressed in this five year sub-program

There are several areas of importance where there may be a role for R&D that are not addressed in the following R&D sub-program. This is a decision that arises from the need to focus resources under RIRDC where there are the greatest gains for all the industry and where R&D is least likely to happen without the support of RIRDC. The areas that are seen as important but more likely to be addressed elsewhere are as follows:

- Wild harvest is a major source of some of the native foods such as bush tomatoes, wattle seed and mountain pepper. It is also an important source of new plant products that may offer opportunities for the industry. Major issues facing the wild harvest industry are the sustainability of the picking, and access to the resource. The first issue can be complex as for some plants it appears that regular picking is important for maintaining production (as with various plums). There is interest in these issues from a biodiversity perspective and the Desert Knowledge CRC (DKCRC) is investing in research in this area. Access issues tend to have social and political dimensions where R&D is less important. In Tasmania, for example, logging and plantation establishment is a potential threat to the wild harvest of mountain pepper. Wild harvest also provides livelihood opportunities for some indigenous communities. There may be complex ownership and access issues associated with indigenous rights where R&D could assist, but these need to be identified by the communities involved and other research organisations such as the DKCRC may be better placed to assist.
- Market research and marketing is always important for industry development. It was agreed that it is better pursued through industry driven cooperation than through the R&D program.
- Processing and value adding to the produce is an important part of the native foods industry. It is also the point in the supply chain where producers are best able to differentiate their product and hence have an incentive to invest in R&D on their own account. While it is not outside the scope of RIRDC to support processing R&D, the requirement for sharing the R&D findings, can reduce the value to the individual producers of making this investment. Given the limited resources and the potential return to providing common information on the produce and solving production problems on farm, it was felt that processing and other post-harvest value adding are lower priority, and in any case more likely to happen in the absence of RIRDC support.

4. Five Year R&D Sub-Program

Vision

- Consumers in Australia and around the world enjoying, sharing and valuing the authentic Australian flavour experience; enabling a profitable and sustainable Australian industry for this growing market.

Mission

To provide research and development that will underpin the industry's ability to create and sustain an authentic Australian flavour experience for consumers by:

- Building consumer recognition and appreciation of the unique flavour experience;
- Achieving a global reputation for reliable supply of consistently high quality and safe food and flavour additives;
- Solving production problems that threaten reliability; and
- Recognising the contributions of Indigenous culture, food practices and value of involvement in the industry.

Objectives

An indicative allocation of resources is given in brackets.

- Developing and supplying product information to support market access and market growth (50%)
- Improving production (growing) efficiencies (35%)
- Investigating new species for their potential to add to the industry appeal and profitability (10%)
- Building industry relationships and improving communications of R&D opportunities and impacts (5%).

Objective 1: Developing and supplying product information to support market access and market growth

Background

Australian native plants face a number of hurdles in being accepted in the food ingredient and flavour markets. The industry is developing plant products that have traditionally been food for indigenous Australians and some that do not appear to have been utilised as food or flavour sources as they are used today in fusion cuisine. Both face hurdles being recognised as traditional foods and achieving the listings required for market access such as GRAS (Generally Recognised as Safe) and HS codes (internationally harmonised commodity code).

As a first step, The FSANZ Novel Food Reference group is currently reviewing the traditional, non traditional or novel status of native food products on a product by product basis. There has been significant success for the industry in this area and will remain an ongoing activity.

Listing on CODEX presents the next step in gaining international recognition, and some progress is underway with a number of small berries having been accepted and more being put forward for the next CODEX meetings scheduled over the next few years.

The Novel Food Regulation (NFR) in the European Union views all foods not consumed in significant amounts in the member states prior to May 1997 as novel, which requires a costly and lengthy process to pass as a novel food to gain market access. While native foods have been exported prior to 1997 to the EU, it is difficult to prove the significance of consumption due to the time past and documentation lost.

Beyond the listing of the native plant products as traditional Australian foods is the development in the market of what these products offer in terms of taste and aroma experience. Common descriptors that the industry members can draw on to describe their products would assist in developing market awareness and in reducing the confusion that can surround products that might have similar or substitute flavours but are of other non Australian plant origins, or vice versa. Ensuring that consumers, in particular the food industry consumers, can get consistent known qualities is important for building the market for Australian native plant foods. There are a number of R&D needs to support the emerging industry strategy of creating a common nomenclature for the plants, their flavours, textures and uses of Australian native ingredients. There are also R&D needs to support the industry meeting the demands of listings of plants. While it is recognised that it will usually be individuals who take specific plants forward through the commercialisation process, the potential for followers to cash in on the leader's hard work and erode their profits, and the potential to damage the market if quality is not maintained make it a priority for industry to facilitate the process. The R&D plan addresses the common R&D needs to support the industry in this endeavour.

Strategies

The following strategies would be applied to produce based on the gaps in the knowledge base. The current state of knowledge and the gaps that the R&D program would seek to fill in over time are being identified in the RIRDC project AUN-1A: "Preparing the native food industry for national and global challenges." This strategy would seek to fill these gaps over the next five years.

- 1.1 Develop a standard set of information for selected produce that includes:
 - Safety information
 - Nutritional information, including where possible take up of bio-actives
 - Post-harvest handling and storage information and the links to quality.

This information would be made available to the industry and potential entrants as well as consumers. It could be used as the basis for developing appellation control for common products that face potential competition from overseas producers. Priority could be given to information required to support product listings.

- 1.2 Develop a common set of flavour and aroma descriptors, characteristics and coding for use by the industry. The R&D component would be limited to developing a robust methodology that could be taken forward by the industry.
- 1.3 Develop product standards. Initial R&D could be targeted to the processes required to achieve this for a diverse range of plant produce where characteristics are often contingent not only on the selected clonal variety but also on microclimate and soils in the production area as well as the production systems used (for example, harvest timing and method). Once a method is established, product standards can be rolled out on a product by product basis when supported by a group of producers.

Funding strategy

The share of RIRDC funding committed to objective one is fifty per cent.

Targets and indicators

The measure of achievement will be the extent to which the gaps have been completed in this table and the contents extended over the next five years. Progress will depend on funding and industry enthusiasm and participation. The indicator would be the publication of information on each species product in the table in print or electronically. Ideally this information would be made available on the ANFIL website.

A five year target would be to have completed 80 per cent of the basic information for this set of produce and added at least five new products to the table with some information.

Objective 2: Improving production (growing) efficiencies

Background

With all new plant products there is often a considerable learning curve in regards to the best management practices for the crop. Growers are engaged in practical R&D as they work out what works well and what does not. There is considerable potential to improve overall productivity through sharing this knowledge, and value to all producers where improving the consistency and quality of supply is important for developing the market. Thus there can be a return to growers in sharing this information. In addition, as in all crops, problems can arise that go beyond the expertise of the grower to solve. Where such problems are common to a number of growers there is a strong industry incentive to address the problem at a collective level. The RIRDC R&D program is well designed to be able to support such collective action.

Strategies

2.1 Encourage the sharing of best management practice information between growers. The R&D component is to support the development of a methodology and template for harnessing best practice information on a crop and communicating it to growers and potential growers.

2.2 Trouble shooting for grower identified production problems. The strategy for the R&D program to facilitate and provide additional financial support for R&D to solve specific production problems where there are a group of growers committed to work together on the problem who are willing to participate in the R&D and make contributions to the project both in cash and kind.

Funding strategy

The share of RIRDC funding committed to objective two is thirty five per cent. It is expected that there will be at a minimum a matching contribution from industry under strategy 2.2. Under strategy 2.1 beyond the pilot scheme, the R&D program may choose to commit a small share of funding (say 25 per cent) to support the communication of best practice information to potential and current growers.

Targets and indicators

A target for strategy 2.1 could be compilation of the best management practices for seven of the most important crops over the five years. The indicator would be the publication of the information electronically or in print.

A target for strategy 2.2 could be based on the number of grower groups who submit accepted proposals for R&D assistance. This indicator could be strengthened by measuring the share of these growers that have the problem addressed to their satisfaction, and the expected impact of the R&D.

Objective 3: Investigating new species for their potential to add to the industry appeal and profitability

Background

Uniqueness is always an important feature in any cuisine and even Australian native foods, where there are many new taste sensations, is no exception. While it is important for the industry to consolidate the position of existing crops, new crops are seen as complementary to this objective. A small share of the budget is reserved to be able to explore the potential of new crops that have been identified by enthusiastic growers, processors or users.

Strategies

3.1 Invite submissions for R&D to explore the potential for new species as viable based on a initial indicators that they are:

- agronomically viable – already grow under conditions that can be replicated or improved upon in commercial production;
- have market potential – there is a feature that complements other native foods or supports the development of a market for the product; and
- are likely to comply with regulatory frameworks for their intended use.

This strategy can also include new applications of existing crops where the use has the potential to add considerably to the size and value of the market for the crop.

Funding strategy

The share of RIRDC funding committed to objective three is ten per cent. It is expected that proponents would be willing to at least provide matching funding for the RIRDC funding as part of the criteria for approval of proposals.

Targets and indicators

A target is that over the five years a minimum of three new plant species or novel uses would be explored. While the target is low, it comes with the condition that those projects supported meet the criteria for initial indicators being satisfied.

Objective 4: Building research and industry capacity and improved communications of R&D opportunities and impacts

Background

The industry has made considerable progress in developing an industry profile and presence with the formation of ANFIL in 2006. It aims to continue the momentum, and apply for support under the DAFF AAIP to develop an industry strategic plan. The RIRDC sub-program helped support the establishment of ANFIL, and through this R&D planning process is assisting ANFIL in taking the next steps toward applying for the AAIP. RIRDC's role in industry development is largely as a catalyst for such progress, and industries reach a point where RIRDC steps back and focuses on the R&D plan, which ideally sits within a broader industry plan. The Australian native food industry is reaching this point, but it was felt that some further support for industry development in the next critical year is important. Thus the strategies are largely for the next year. One element of industry development important for R&D as well as broader industry development is the relationships between the industry and research providers. An issue identified in the SWOT was the inconsistent analyses provided by laboratory services. As robust property analysis is important for good R&D and critical for meeting listing and customer requirements improving the consistency of laboratory testing is seen as a priority for the industry.

Strategies

4.1 Support ANFIL in the development of an industry plan.

4.2 Develop criteria/standards for laboratories used for testing and property analysis.

Funding strategy

The share of RIRDC funding committed to objective four is five per cent. ANFIL would provide much of the input in delivering these objectives. Criteria/standard development would require the identification of needs according to national and international regulatory requirements and then sourcing of laboratories able to provide the data required.

Targets and indicators

The target for the first strategy is for the industry to be accepted into the AAIP.

The target for the second strategy is a set of agreed criteria/standards for testing and property analysis that are utilised by the laboratories providing services to the industry. The indicator would be a contact list of laboratories that provide consistent quality services (that meet the national and international regulatory requirements) maintained by ANFIL and available to the industry.

5. Native Foods R&D Budget

The Native Foods R&D budget for 2007–2012 is to include up to \$200,000 core RIRDC funds per year (depending on the quality and relevance of research proposals and the amount of cash contribution from industry). Industry is expected to increase its currently low cash contributions up to \$50,000 (or 25%) per year by 2008–2009 and then up to \$100,000 (or 50%) by 2011–2012.

Performance in relation to the priorities and strategies will be reviewed annually by RIRDC in consultation with the Australian Native Foods Industry.

Native Foods R&D Priorities and Strategies 2007 – 2012

Pub. No. 08/022

The RIRDC Native Foods Sub-program has a cohesive set of projects within the New Plants Program. This Strategy covers a wide range of topics, including support for the development of the industry peak body, with the majority of funding going to addressing production constraints and exploring novel uses to grow the markets for Australian native foods.

The Strategy builds on the outcomes of a stakeholder meeting conducted in June 2007 that followed an industry planning day and involved a wide range of industry stakeholders from growers to processors, marketers and distributors. The strategy identifies key objectives for investment and areas for future consideration, detailing the agreed strategic research and development needs that RIRDC will pursue in partnership with industry. As a sub-program it focuses on priorities and on strategies that will strengthen industry engagement with R&D and best meet

the diverse needs of the industry members. The production of this report was funded by RIRDC core funds which are provided by the Australian Government.

This R&D Priorities and Strategies Report is an addition to RIRDC's diverse range of over 1700 publications and forms part of the New Plant Products Research and Development Program, which aims to facilitate the development of new industries based on plants or plant products that have commercial potential for Australia. RIRDC manages and funds priority research and translates results into practical outcomes for industry. Our business is about new products and services and better ways of producing them. Most of the information we produce can be downloaded for free from our website: www.rirdc.gov.au.

Books can be purchased online or by phoning 02 6271 4100.

**Rural Industries Research &
Development Corporation**
PO Box 4776
KINGSTON ACT 2600

Level 2,
15 National Circuit
BARTON ACT 2600

Phone: 02 6271 4100
Fax: 02 6271 4199
Email: rirdc@rirdc.gov.au
Web: www.rirdc.gov.au

rirdc.gov.au

